

## UACE Pre-registration 2026

### SUBSIDIARY MATHEMATICS PAPER SET 1

Time: 2 hours

**INSTRUCTIONS TO CANDIDATES:** Attempt all items

#### SECTION A

##### ITEM 1

The Sports Department at your school plans to introduce a special holiday training program for learners living within the community. The masses (to the nearest kilogram) of learners who have expressed interest in the program are normally distributed as recorded below:

24 55 63 34 36 56 40 28 43 66  
55 58 72 48 49 50 51 61 52 53  
53 54 45 41 56 39 57 57 46 58  
59 60 51 62 31 64 65 44 68 47

The program will only commence if the likelihood of learners whose mass exceeds 38 kg is greater than half. The data collected is to be organized in groups of ten from the smallest mass.

Jake's wants to buy 4 pens and 5 notebooks; it asks two of his friends; Alex who says that 2 pens and 4 notebooks costing 12000 and Joy who bought 5 notebooks and 4 pens which is 4500 more than what Alex spent. There is need to find the cost of each pen and each notebook

The student tracks prices of essential items

Item	Price(2024)	Price(2025)	weight
Rice	UGX.5000	UGX.6500	6
milk	UGX. 4000	UGX.44000	4
Bread	UGX. 3000	UGX.3600	3
Eggs	UGX. 9000	UGX. 10500	2

The base year is 2024 .

##### Tasks:

Help the department to determine:

- Whether the training program for 2025 should begin. Using statistics knowledge
- What will jake pay for what he needs to buy?
- Calculate the weight price index, By what percentage has cost of living changed?

#### SECTION B

## ITEM 2

A manager of a successful bakery called “**The cookie corner**” that sell three main treats has new order to make cookies, cupcakes and cake bread use the ingredients as shown in the table below

Ingredients	Cookie	Cupcake	Cake Bread
Flour (cups)	2	4	8
Sugar (cups)	1	2	4
Eggs (count)	2	4	10

The big party orders **20** cookies, **10** cupcakes and **4** cake bread

The business saved Ugx.25,000 in the first week of its opening and since then it has added 5,000 saving per week.

The business posts an advert of a video for the business products, on the first hour, 3 people watched it. Every hour after that, each person who watched it shares it with 2 new people.

### Tasks:

- help the school administration as to know how much will he save by 15<sup>th</sup> week and what is the total savings by 15<sup>th</sup> week? (hint AP)
- Using GP knowledge, how many new views will it get by the 10<sup>th</sup> hour and how long will it take to have more than 1000 views in total?
- Help the owner know how much of everything is needed to be bought. Using matrix.

## ITEM 3

A youth group in Uganda plans to host a National Youth Camp in November to empower young people in agriculture. However, recent camps have been disrupted by unpredictable rainfall and rising malaria cases.

They have obtained monthly rainfall data along with the corresponding number of reported malaria cases.

Months	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT
Rainfall(mm)	56	48	132	185	160	198	165	143	98	120
Malaria cases	21	18	45	70	108	91	75	60	35	29

The organizing team intends to forecast the expected rainfall in November in order to estimate Malaria cases in the same month, based on the relationship between the two.

### Tasks:

Help the organizing team to:

- Use a scatter diagram to make a recommendation based on the expected rainfall and its relationship with malaria cases for November, to ensure the success of the planned camp.
- Analyse the using spearman rank correlation to comment on the relationship.

**END**